Dialog Plus

UNINTERRUPTIBLE POWER SUPPLY

- ON LINE -

700 VA ÷ 3000 VA

User's manual

Designed for
Microsoft®
Windows® XP
Windows® 2000

This part of the manual contains precautions that must absolutely be followed as they relate to SAFETY.

Installation

- Connect the UPS system only to an earthed shockproof socket outlet.
- The building wiring socket outlet (shockproof socket outlet) must be easily accessible and close to the UPS system.
- Please use only VDE-tested, CE-marked mains cable (e.g. the mains cable of your computer) to connect the UPS system to the building wiring socket outlet (shockproof socket outlet).
- Please use only VDE-tested, CE-marked power cables to connect the loads to the UPS system.
- When installing the equipment, it should ensure that the sum of the leakage current of the UPS and the connected consumer does not exceed 3.5mA.

Operation

- This UPS is operated by laymen.
- Do not disconnect the mains cable on the UPS system or the building wiring socket outlet (shockproof socket outlet) during operations since this would cancel the protective earthing of the UPS system and of all connected loads.
- The UPS system features its own, internal current source (batteries). The UPS output sockets may be electrically live even if the UPS system is not connected to the building wiring socket outlet.
- In order to fully disconnect the UPS system, first press the OFF-switch then disconnect the mains.

Maintenance, servicing and faults

- The UPS system operates with hazardous voltages. Repairs may be carried out only by qualified maintenance personnel.
- **Caution** - risk of electric shock. Even after the unit is disconnected from the mains power supply (building wiring socket outlet), components inside the UPS system are still connected to the battery and are still electrically live and dangerous. Before carrying out any kind of servicing and/or maintenance, disconnect the batteries and verify that no current is present.
- Only persons adequately familiar with batteries and with the required precautionary measures may exchange batteries and supervise operations. Unauthorised persons must be kept well away from the batteries.
- **Caution** -Batteries may cause electric shock and have a high short-circuit current. Please take the precautionary measures specified below and any other measures necessary when working with batteries:
  - remove wristwatches, rings and other metal objects
  - use only tools with insulated grips and handles.
- When changing batteries, install the same number and same type of batteries.
- Do not dispose of batteries in a fire. The batteries may explode.
- Do not open or mutilate batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic.
- Do not dismantle the UPS system.

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USER'S MANUAL

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INTRODUCTION

Thanks you for choosing our product.

Our manufacturer are renowned specialists in the development and production of uninterruptible power supplies (UPS). The UPS in this range are high quality products, designed and built with care in order to give you the best performance.

This equipment can be installed by anyone, subject to **CAREFULLY AND THOROUGHLY READING THIS MANUAL.**

The manual contains detailed instructions on how to use and install the UPS.
For information on using and getting the best performance from your UPS, this manual should be kept safely in the vicinity of the UPS and CONSULTED BEFORE TAKING ANY ACTION ON THE UPS.

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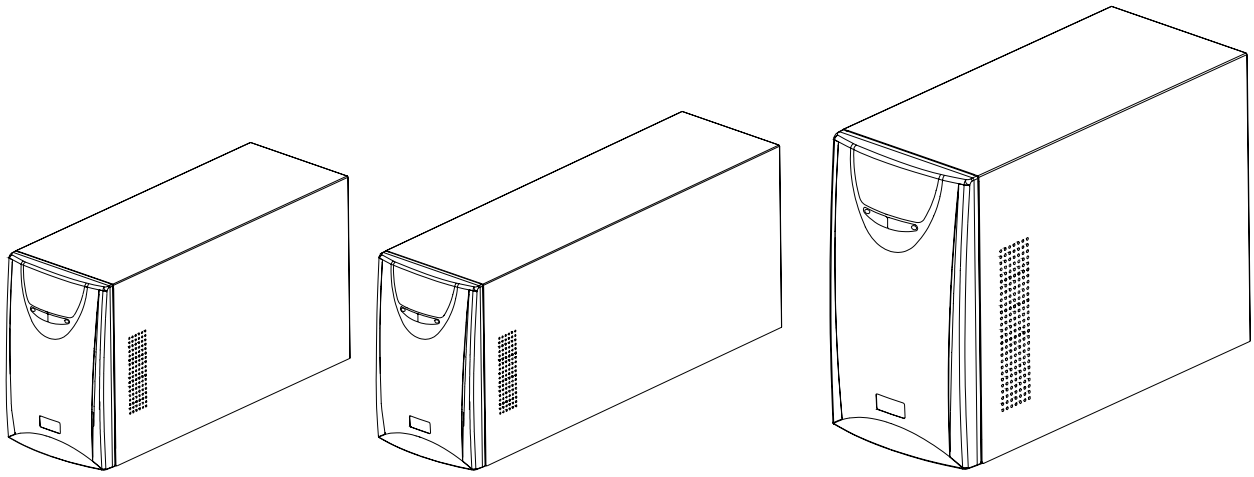
PRESENTATION

The new ***Dialog Plus*** family of UPS has been designed to offer versatility and reliability.
They use ON LINE technology, which means that the AC power for the load is converted to DC and then back to AC again to ensure a perfectly sinusoidal output, the frequency and voltage of which are established by microprocessor digital control and are independent of the input power source. This family of UPS has an automatic by-pass device that switches the load to mains power in the event of overvoltages or any other power problems to guarantee continuous power supply even in critical conditions.
This family of UPS is available in two versions:

- **Standard**: with batteries inside of the UPS
- **ER**:without batteries inside, but including a powerful batterycharger (max 8A). This series must be combined with an external battery box, so it is indicated for long autonomy time.

The figures below show the various product versions:

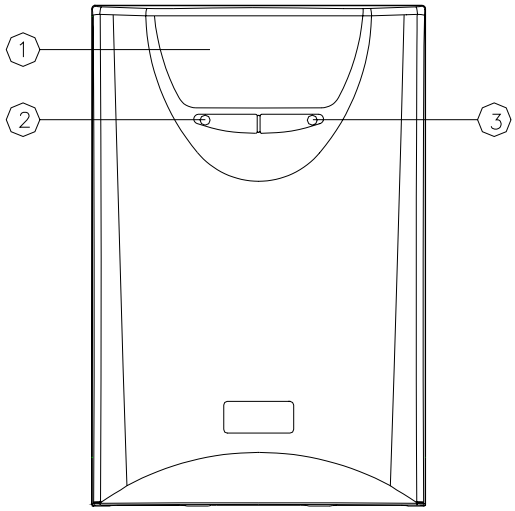


		Dialog Plus 70	***Dialog Plus 100/100ER***	***Dialog Plus 150***	***Dialog Plus 200/200ER***	***Dialog Plus 300/300ER***
Nominal power	[VA]	700	1000	1500	2000	3000
Output nominal voltage	[Vac]	220/230/240				
Dimensions HxWxD	[mm]	231x158x400	231x158x400	231x158x500	340x192x460	340x192x460
Weight	[Kg]	12	14/8	19	34/14	35/14

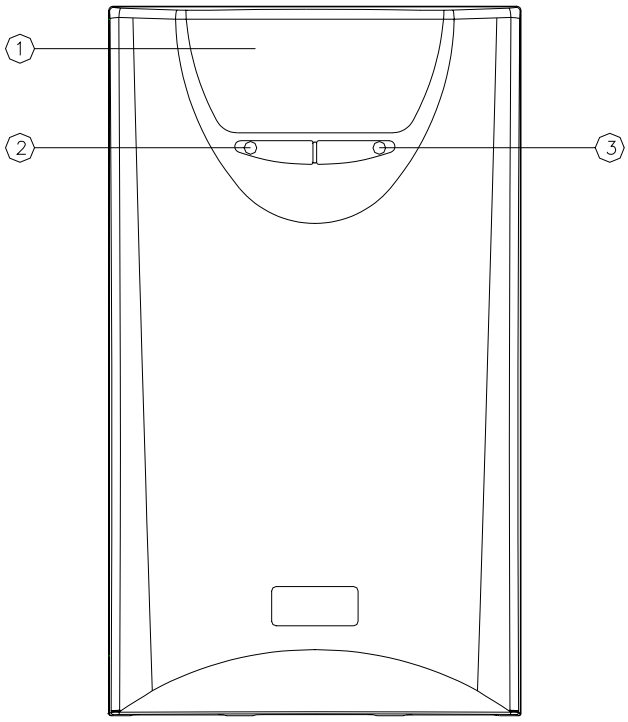
VIEW OF THE UPS

Front Views

Models: 700-1000-1500VA



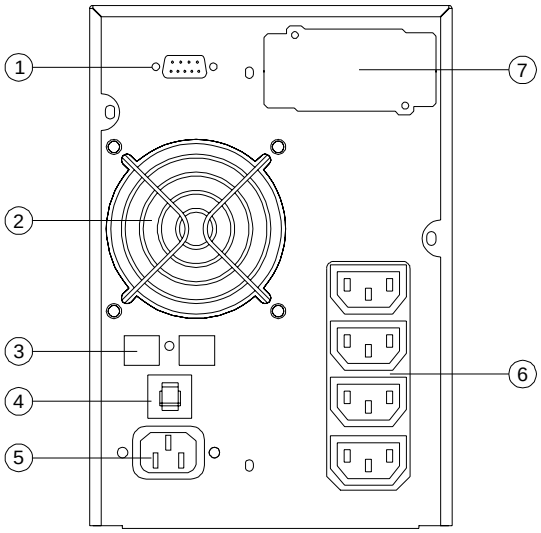
Models: 2000-3000VA



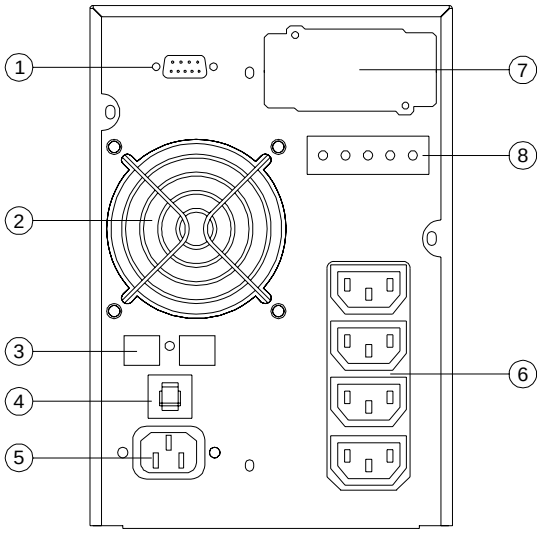
1. LED indicator panel
2. ON button
3. OFF button

Rear Views

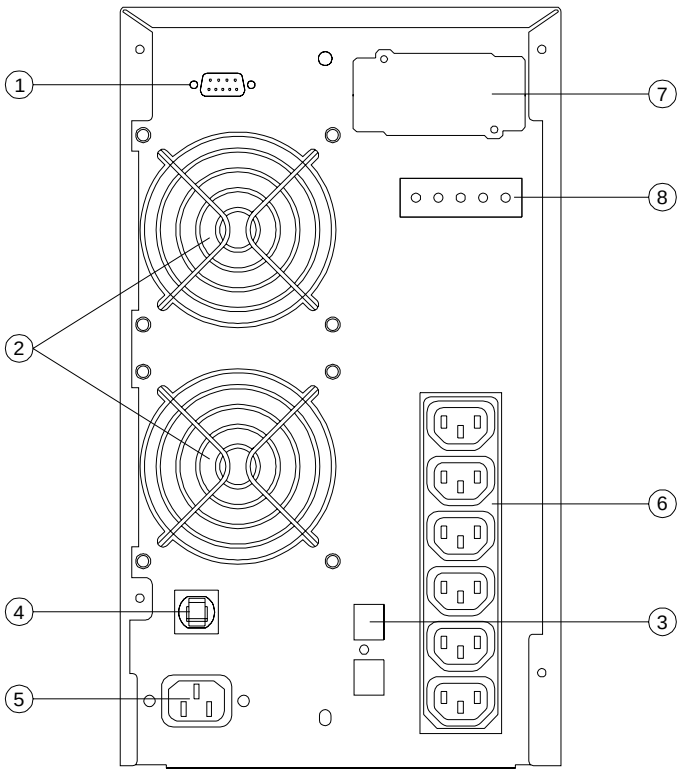
Dialog Plus 70



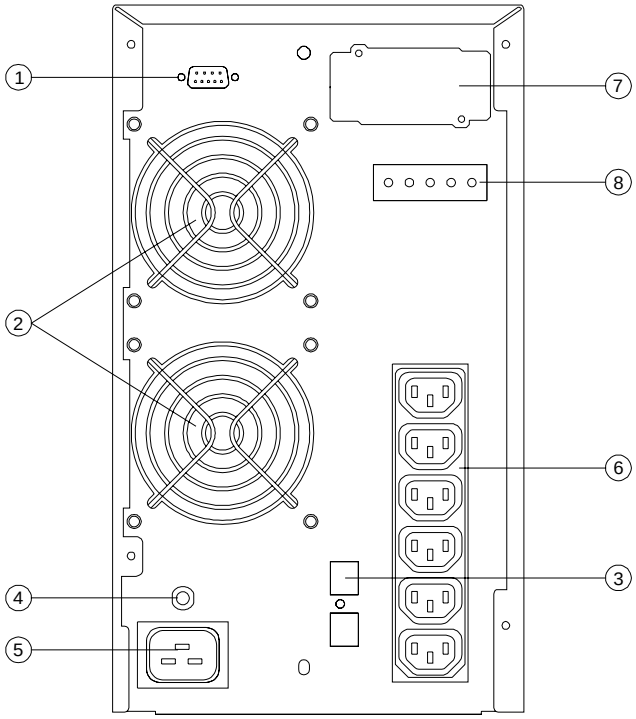
Dialog Plus 100 / 100 ER / 150



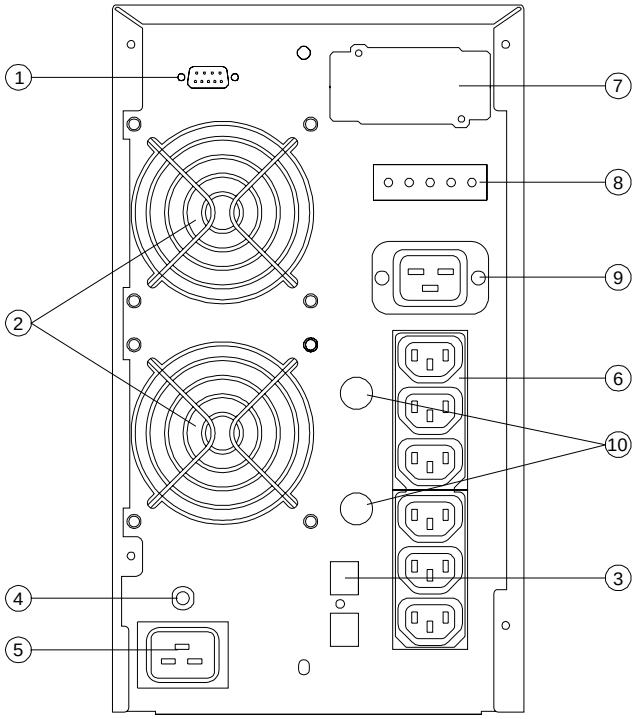
Dialog Plus 200



Dialog Plus 200 ER

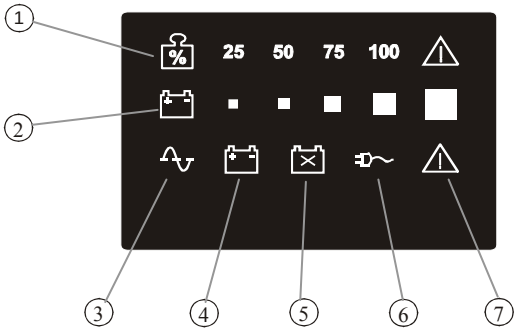


Dialog Plus 300 / 300 ER



1. RS232 serial communication port
2. Cooling fans
3. Telephone/modem protection
4. Input thermal protection
5. Mains power socket
6. Output sockets
7. Communication expansion slot
8. Battery expansion connector
9. 16A output socket
10. Output socket fuse boxes

VIEW OF LED INDICATOR PANEL



① Load level indicator

② Battery level indicator

③ Mains mode indicator

④ Battery mode indicator / Battery low indicator

⑤ Battery failure indicator

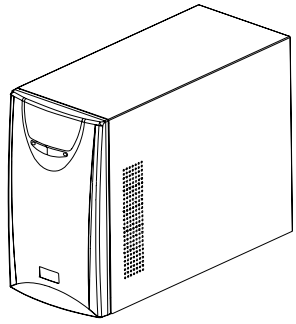
⑥ Load powered by bypass indicator

⑦ “Fault/Stand-by” indicator

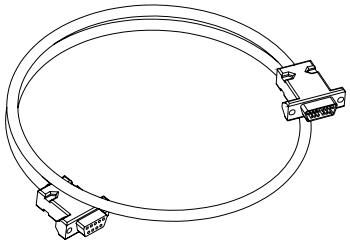
OPENING THE PACKAGING AND CHECKING THE CONTENTS

The first thing to do after opening the packaging is to check the contents
The packaging should contain the following:

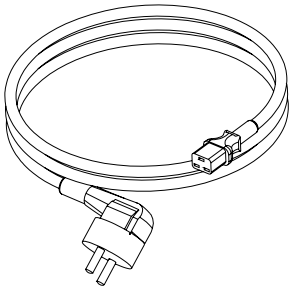
- UPS



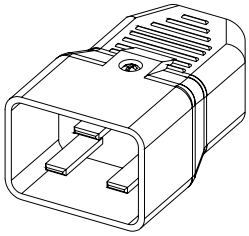
- RS232 serial cable



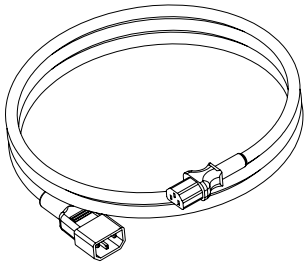
- IEC 10A(or 16A) Power cord



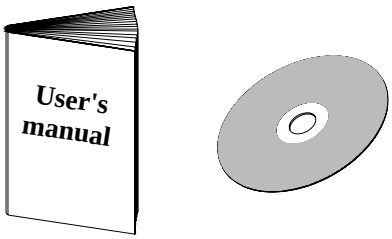
- IEC 16A Power cord set (only for model 3000VA)



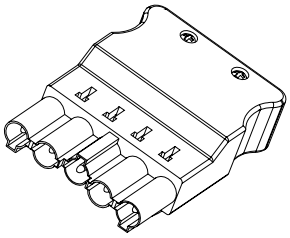
- 2 IEC 10A connection cables



- User manual + CD-ROM with software



- Connector for battery expansion kit (only on ER models)



INSTALLATION AND USE

This chapter describes the operations to be carried out to prepare the UPS.
WARNING: the instructions below should be followed scrupulously for your personal safety and that of the product.

BEFORE CARRYING OUT THE FOLLOWING SEQUENCE OF OPERATIONS, MAKE SURE THAT THE UPS IS COMPLETELY SWITCHED OFF AND IS NOT CONNECTED TO THE MAINS OR TO ANY LOAD.

CONNECTIONS AND SWITCHING ON FOR THE FIRST TIME

1) Connect the power cable supplied with the UPS to the IEC input socket.
2) Connect the UPS power cable to mains power supply.
3) After a few seconds the UPS starts up, a beep sounds and the "Fault/Stand-by" indicator lights up. The UPS is in stand-by mode on minimum power. The microprocessor is powered and will supervise operations and run diagnostics. The batteries are being charged, the sockets are disconnected and everything is ready to go.
4) Connect the load/s to be powered to the sockets on the rear of the UPS using the IEC-IEC cables supplied or a cable with maximum length of 10 meters.
   N.B.: do not connect any loads that absorb more than 10A to the 10A IEC sockets. These loads should be connected exclusively to the 16A IEC socket when this is available.

Connection to the Net/Tel protection device

A telephone/modem or network cable can be connected to the modular RJ-45/RJ11 connectors located on the rear of the UPS that protect against overvoltages. A telephone extension cable is required for this type of connection.

N.B.: The connection is optional. The Net/Tel protection is active even when the UPS is turned off or disconnected from mains power.

Warning: The device that protects against overvoltage on the telephone line may not work if it is not installed correctly. Ensure that the telephone wall cable is inserted in the connector marked "IN" and that the cable of the unit to be protected (telephone, modem, network card, etc.) is inserted in the connector marked "OUT".

Warning: The overvoltage protection device is only for indoor use. Do not connect telephone wires during a storm.

N.B.: The protection device limits the effects of an overvoltage but does not guarantee overall protection.

SWITCHING ON FROM MAINS POWER

1) Press the ON button for at least one second (until a beep sounds). Once it is released, all the LEDs come on for 1 second and a beep sounds. The UPS then runs a short test on the battery voltage and mains power status. In normal conditions, after this test, only the "mains" LED, load level and battery level indicators stay lit (if different lights or audio signals appear/occur, consult the table in the "Alarms and Indicator" Chapter for further details).
2) Switch on the loads connected to the UPS.

   Only for the first time you switch on: after about 30 sec., check that the UPS is working correctly by:

   1. Simulating a black-out by removing the mains power cable
   2. The load must continue to receive power, the "battery mode" indicator should light up and the UPS should beep every 4 seconds.
   3. Reconnect the power cable. Normal mains power operation should be restored.

SWITCHING ON FROM BATTERY

1) When mains power is not available, press the ON button for about 1 second (until a beep sounds and then release it). All the icons on the indicator panel light up for 1 second and a beep sounds. A test is run on the batter voltage and, if all is normal, only the "Battery mode", load level and battery level indicators stay on accompanied by an intermittent beep.
2) Switch on all the loads connected to the UPS.

SWITCHING OFF THE UPS

When mains power is available, to switch off the UPS hold the OFF button down (for about 2 seconds) until a beep sounds and then releases it. UPS returns to standby mode and only the "Fault/Standby" indicator starts flashing.

When mains power is not available and time function is not on, to switch off the UPS hold the OFF button down (for about 2 seconds) until a beep sounds and then releases it. The buzzer sounds for 1 second and all LEDs light till the power source is shutdown completely.

When mains power is not available and time function is on, to switch off the UPS hold the OFF button down (for about 5 seconds) until the **2nd** beep sounds and then releases it. The buzzer sounds for 1 second and all LEDs light till the power source is shutdown completely.

ADDITIONAL FUNCTIONS PERFORMED ON THE FRONT PANEL

UPS in stand by mode

- To cancel a **scheduled shutdown** via software, hold the ON key down (for about 2 seconds) until the **2nd beep** sounds and then release it.
- To cancel a **scheduled shutdown** via software, hold the OFF key down (for about 2 seconds) until a **beep** sounds and then release it.

UPS in mains power mode

- To **mute the intermittent alarm** on the UPS during the final phase of a software scheduled shutdown, hold the ON key down (for about 1 seconds) until a **1st beep** sounds and then release it
- To cancel a **scheduled shutdown** via software, hold the ON key down (for about 2 seconds) until the **2nd beep** sounds and then release it
- To run a **battery test**, hold the ON key down (for about 5 seconds) until the **third beep** is heard and then release it. At this point the test starts. The LEDs flash cyclically on the display panel. Once the test is completed, if the batteries are in good condition, the UPS will return to mains mode with the usual indications, or, if the batteries are faulty or discharged, the "battery failure" light comes on accompanied by a beep (consult the table in the Alarms and Indicator Chapter for further details)
- To see the approximate input **mains voltage** value of the UPS on the battery indicator, press the ON button for at least 10 seconds until the **4th beep** sounds. Release the button and the battery level indicator shows the normal battery voltage value.

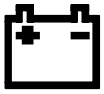
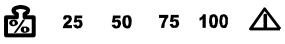
UPS in battery mode

- To **mute the intermittent alarm** that sounds when the UPS is in battery mode, hold the ON button down (for about 1 second) until the **1st beep** is heard and then release it.

  N.B. the UPS cannot be muted if the batteries are running low (1 beep every second).
- To **cancel a software-scheduled shutdown**, hold the ON button down (for about 2 seconds) until the **2nd beep** is heard and then release it.

LED INDICATOR PANEL

This chapter gives a detailed description of all LED indicator panel.

ICON	STATUS	DESCRIPTION
	Red / Steady	Indicates an fault
	Red / Flashing	The UPS is in stand-by mode
	Green / Steady	The UPS is operating on mains power
	Green / Flashing	▪ The UPS is operating off the bypass ▪ The voltage input is out of the accepted range
	Green / Steady	The UPS is operating in battery mode and will beep at regular intervals.
	Green / Flashing	When operating off battery power, the UPS signals that it is about to switch off due to end of discharge. In this state, it beeps at regular intervals of 1 sec. (see Tab. 1)
	Red / Steady	Indicates battery failure
	Yellow / Steady	The loads connected to the UPS are powered by the bypass
	Green / Active	Represents the estimated percentage of battery charge by 5 LEDs (see table 2)
		Hold the ON button down for at least 10 seconds to show the input voltage value (see table 3)
	Green – Red / Active	Indicates the % of load applied to the UPS in relation to the nominal value. the last icon indicates overload (see table 4)

Tab. 1

Battery status	LED - battery working -
Normal	•
Low	♦

- **LED with steady light on**
- ♦ **LED with flashing light on (1 flash per second)**

Table 2					
Battery level	**Battery LED bar**				
	1	2	3	4	5
0%~20%	●				
20%~40%	●	●			
40%~60%	●	●	●		
60%~80%	●	●	●	●	
80%~100%	●	●	●	●	●

Table 3					
Input Voltage	**Battery LED bar**				
	1	2	3	4	5
190V~200V	●				
200V~230V	●	●			
230V~250V	●	●	●		
250V~260V	●	●	●	●	
>260V	●	●	●	●	●

Tab. 4					
Load level	**Load LED bar**				
	25	**50**	**75**	**100**	⚠
0~5%					
5~25%	●				
25%~50%	●	●			
50%~75%	●	●	●		
75%~102%	●	●	●	●	
>102%	●	●	●	●	●

- ● **LED on with steady light**
- ♦ **LED with flashing light on (1 flash per second)**

OVERLOADS ON THE UPS

The following table shows how the UPS reacts when mains and battery overloads occur and indicates the time that the UPS will remain powered.

OVERLOAD LEVEL	LOAD POWER TIMES (off mains)	LOAD POWER TIME (off battery)
102% < Load ≤ 109%	Switches to bypass after 30 min	Shutdown after 30 min (if battery back up time allows)
110% <= Load ≤ 130%	Switches to bypass after 30 sec	Shutdown after 30 sec
130% < Load ≤ 150%	Switches to bypass after 10 sec	Shutdown after 10 sec
Load > 150%	Switches to bypass after 0.5 sec	Shutdown after 0.5 sec
Short circuit	Immediate shutdown	Immediate shutdown

After switching over to the bypass due to overloading, the UPS powers the loads off mains power and a continuous alarm will sound. By reducing the load within the 102% threshold, the UPS returns to normal operating mode.

When the overload level is too high, the input thermal protection is activated and the UPS will be completely shutdown.

To restore normal operation, reduce the load so that it is within the 102% threshold and restore thermal protection by pressing the relevant button on the rear of the UPS and then switch on again.
To restore normal operation following failure due to overloading (continuous beep and load not powered), reduce the load so that it falls within the 102% threshold. Hold the OFF button down until the continuous beep stops and then release it. Wait until the UPS is completely shutdown and then switch on again.

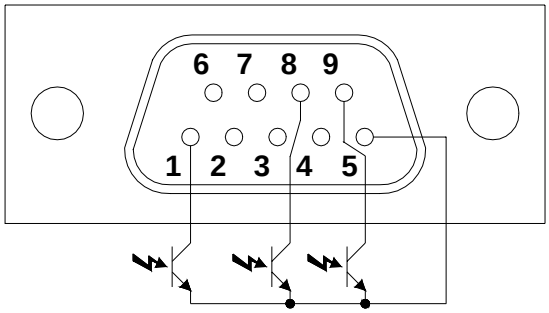
COMMUNICATION PORTS

The following communication ports can be found on the rear of the UPS (see *Views of the UPS*):

- RS232Connector
- COMMUNICATION SLOT: an expansion slot for additional interface boards

RS232 Connector

RS232 CONNECTOR



PIN No.	SIGNAL
1	Contact closed: UPS failure/Bypass/Alarm (1)
2	TXD
3	RXD/SD (2)
4	
5	GND
6	+12Vdc interface power input
7	PNP Signal
8	Contact closed: battery low pre-alarm (1)
9	Contact closed: battery mode (1)

(1) Opto-isolated contact: max. +35Vdc / 15mA
(2) SD: +(5~15) V DC for at least 20 seconds, UPS in battery mode and shutdown completely

Communication Slot

All UPS come with an expansion slot for optional communication boards so that the unit is compatible with the main communication standards.

Some examples:

- Serial port duplexer
- Ethernet network agent with TCP/IP, HTTP and SNMP protocols
- RS232 + RS485 port with JBUS / MODBUS protocol

For more details on the options available, visit the manufacturer's web site.

SOFTWARE

Monitoring and control Software

Powershield 2 **software ensures effective and intuitive *UPS management* by displaying all the most important information such as input voltage, the load levels, battery life, etc.**
It can also automatically perform shutdown operations, send e-mails, sms and network messages when certain user-defined events occur.

Installation Operations:

- Connect the UPS RS232 communication port to a COM port on the PC using the serial cable provided*.
- Insert the CD-Rom and select the operating system required.
- Follow the installation instructions. .
- For more detailed information on the installation and use of the software, refer to the software manual in the *Manuals* folder on the CD-Rom provided.

Visit the manufacturer's web site to check whether a more recent version of the software is available.

Configuration Software

UPSTools software allows the user to configure the UPS and provides a full view of the system parameters and status through the RS232 serial port.
Refer to the paragraph ***UPS Configuration*** for a list of the possible configurations available.

Installation Operations:

- Connect the UPS RS232 communication port to the COM port on the PC using the serial cable provided*.
- Follow the installation instructions given in the software manual in the *UPSTools* folder on the CD-Rom provided.

Visit the manufacturer's web site to check whether a more recent version of the software is available.

***** The cable used should be max. 3m long.

UPS CONFIGURATION

The following table lists all the possible configurations available so as to best adapt the UPS to user requirements. The configuration may be modified only by using the configuration software provided.

FUNCTION	DESCRIPTION	PREDEFINED	POSSIBLE CONFIGURATIONS
Automatic Restart	Automatic restart when mains power returns	Enabled.	• Disabled • Enabled
Battery low alarm	Remaining battery charge level setting for the battery low alarm	3 min.	1 - 99 in steps of 1 minute
Output frequency	Allows the user to select the output frequency.	50Hz	• 50Hz • 60Hz • Auto (depending on the UPS input frequency it will operate at 50 or 60 Hz)
Output voltage	Allows the user to select the output voltage	230 Vac	• 220 Vac • 230 Vac • 240 Vac
Bypass voltage threshold	Selects the voltage range accepted for switching over to bypass	Low: 180V High: 264V	Low:180 ÷ 200 in steps of 1V High: 250 ÷ 264 in steps of 1V
Battery capacity	Allow the user to set the capacity of battery	Standard: 7.2Ah ER: 65Ah	The user must set the capacity of battery if the actual capacity is different from the default value.

The following table describes the light and audio indicators that appear/sound during normal UPS operation.

UPS Status		Load level					Battery level					Mains LED	Battery LED	By-pass LED	Battery failure LED	Failure/ Fault LED	Audio Alarm
		1	2	3	4	5	1	2	3	4	5						
Standby																♦	
Bypass		**Load level**					**Battery level**					♦		•			
Line		**Load level**					**Battery level**					•					
Battery	**Battery normal**	**Load level**					**Battery level**						•				**1 beep every 4s**
	Battery low												♦				**1 beep per sec.**
Battery test	**Test phase**	**Load level**					**Battery level**					♦ **(cyclically)**					
	Test over: **If the battery < test voltage**											•			•		**6 beeps** **(2 per second)**
During countdown of auto restart	**Mains normal**											♦				♦	
	Mains abnormal												♦			♦	
During countdown of shutdown	**Line mode**	**Load level**					**Battery level**					•	♦				**1 beep every 4s** **(During the final phase of the shutdown)**
	Battery mode												♦				

- **LED on with steady light**
- ♦ **LED on with flashing light (1 flash per second)**

ALARMS AND INDICATORS

The following table describes the light and audio signals that appear/sound to indicate a fault.

UPS Status		Load level					Battery level					Mains LED	Battery LED	Bypass LED	Battery failure LED	Failure/ Fault LED	Audio Alarm
		1	2	3	4	5	1	2	3	4	5						
Mains overload	Alarm phase						Battery level					●					2 beeps per sec.
	Switch over to bypass due to overload	●	●	●	●	●						♦		●		●	continuous beep
Battery overload	Alarm phase	●	●	●	●	●	Battery level						●				2 beeps per second
	Failure										●					●	continuous beep
Capacitor bank voltage fault		Load level							●							●	continuous beep
Output short circuit		Load level						●			●					●	continuous beep
Inverter fault		Load level						●								●	continuous beep
Overheating fault		Load level					●									●	continuous beep
Overloaded Battery fault	Bypass	Load level					♦	♦	♦	♦	♦	♦		●		●	4 long beeps at 1-second intervals
	Line											♦				●	
	Standby															●	
Battery charge fault	Bypass	Load level										♦	♦	●		●	1 beep per second
	Line											●	♦			●	
	Standby												♦			●	
Fan fault		Load level					●				●					●	1 beep per second
Input Relay fault		Load level								●						●	Continuous beep

- ● **LED on with steady light**
- ♦ **LED on with flashing light (1 flash per second).**

Very often incorrect UPS operation is not caused by a fault but by common problems, difficulties or carelessness.
The table below gives some useful information to help the user solve the most frequent problems.

PROBLEM	POSSIBLE CAUSE	SOLUTION
THE DISPLAY PANEL DOES NOT LIGHT UP	THE POWER CABLE IS NOT CONNECTED	Check that the power cable is connected correctly.
	NO MAINS POWER (BLACK-OUT)	Check that there is voltage in the socket to which the UPS is connected (try with a table lamp)
	INPUT THERMAL PROTECTION IS ACTIVE	Reset the protection by pressing the button on the rear of the UPS (CIRCUIT BREAKER). N.B.: Check that there is no UPS output overload.
THE PANEL IS ON BUT THE LOAD IS NOT POWERED	UPS IN STANDBY MODE	Press the ON button on the front panel to power the loads.
	THE LOAD IS NOT CONNECTED	Check the connection to the load.
THE UPS IS IN BATTERY MODE EVEN THOUGH MAINS POWER IS AVAILABLE	INPUT THERMAL PROTECTION ACTIVE	Reset the protection by pressing the button on the rear of the UPS (CIRCUIT BREAKER). N.B.: Check that there is no UPS output overload.
	THE INPUT VOLTAGE IS OUTSIDE THE ACCEPTED VALUES FOR OPERATION OFF MAINS POWER	Mains power problem. Wait until the input voltage returns to acceptable limits; the UPS will automatically return to mains power mode.
A CONTINUOUS BEEP SOUNDS AND THE LOAD INDICATOR IS ALL LIT UP	THE LOAD CONNECTED TO THE UPS IS TOO HIGH	Reduce the load so that it falls within the 102% threshold.
"BATTERY FAILURE" APPEARS ON THE DISPLAY	THE BATTERIES MUST BE REPLACED	Contact the Technical Support centre
A CONTINUOUS BEEP SOUNDS AND THE LED PANEL SHOWS ONE OF THE INDICATIONS LISTED IN THE "FAULTS TABLE"	A FAULT HAS BEEN FOUND ON ONE OR MORE LOADS POWERED BY THE UPS	Disconnect all the loads and reconnect them one at a time to identify the faulty load.
	A MALFUNCTION HAS OCCURRED	If possible disconnect the load, switch the UPS off and on again. If the problem remains, call the Technical Support centre.

TECHNICAL SPECIFICATIONS

MODELS		Dialog Plus 70	Dialog Plus 100	Dialog Plus 100 ER
INPUT				
Nominal voltage (±1.5%)	[Vac]	220 / 230 / 240		
Transfer Voltage Range				
- low line transfer	[load %] [Vac]	Based on load percentage 100-80% =160 ± 5 80-70% = 140 ± 5 70-60%= 120 ± 5 60-0%= 110 ± 5		
-Low line comeback	[Vac]	170 ± 5		
-High line transfer	[Vac]	300 ± 5		
-High line comeback	[Vac]	285 ± 5		
Nominal frequency	[Hz]	50 / 60		
Nominal current	[A]	3.8	5	6.2
Power factor		≥ 0.97		
Input protection		7A thermal breaker		
BYPASS				
Accepted voltage range for switch over	[Vac]	180 - 264		
Accepted frequency range for switch over		Selected frequency ±5 %		
Time taken for switch over	[msec]	Typically: 2 - Maximum: 4		
BATTERY				
N° batteries / V / Ah		2 / 12 / 7.2	3 / 12 / 7.2	--
Recharge time	[h]	4 h to 80% of full charge		--
OUTPUT				
Nominal voltage	[Vac]	220 / 230 / 240		
Static variation (4)		1.5%		
Dynamic variation (5)		≤ 5% in 20 msec		
Wave form		Sinusoidal		
Voltage distortion @ linear load		≤ 3%		
Voltage distortion @ distorting load (3)		≤ 6%		
Frequency (6)		50 – 60 Hz ± 0.2Hz		
Synchronisation range		46-54Hz / 56-64Hz		
Current crest factor		3 : 1		
Nominal power (3)	[VA]	700	1000	
Nominal power	[W]	490	700	
OTHER VALUES				
Current leakage to ground	[mA]	≤ 1.2		
AC/AC efficiency		86%	88%	
Ambient temperature (7)	[°C]	0 – 40		
Humidity		< 90% non condensing		
Protections		Excessive battery discharge - overcurrent – short circuit – overvoltage - undervoltage - thermal		
Safety certifications		EN62040-1-1 and EEC 73 / 23, 93/68 specifications		
EMC Compliance		EN 50091 - 2 cl. B and EEC 89/336, 92/31, 93/68 specifications		
Noise		< 45 dB(A) at 1 Mt.		
Dimensions H x W x D	[mm]	231 x 158x 400		
Weight	[Kg]	12	14	8

MODELS		**Dialog Plus 150**	**Dialog Plus 200**	**Dialog Plus 200 ER**

INPUT

Nominal Voltage (±1.5%)	[Vac]	220 / 230 / 240		
Transfer Voltage Range				
-Low line transfer	[load %] [Vac]	Based on load percentage 100-80% =160 ± 5 80-70% = 140 ± 5 70-60%= 120 ± 5 60-0%= 110 ± 5		
-Low line comeback	[Vac]	170 ± 5		
-High line transfer	[Vac]	300 ± 5		
-High line comeback	[Vac]	285 ± 5		
Nominal frequency	[Hz]	50 / 60		
Nominal current	[A]	7.2	10	13.4
Power factor		≥ 0.97		
Input protection		10A thermal breaker	12A thermal breaker	16A thermal breaker

BYPASS

Accepted voltage range for switch over	[Vac]	180 – 264		
Accepted frequency range for switch over		Selected frequency ±5 %		
Time taken for switch over	[msec]	Typically: 2 - Maximum: 4		

BATTERY

N° batteries / V / Ah		4 / 12 / 7.2	8 / 12 / 7.2	--
Recharge time	[h]	4 h to 80% of full charge		--

OUTPUT

Nominal voltage	[Vac]	220 / 230 / 240		
Static variation (4)		1.5%		
Dynamic variation (5)		≤ 5% in 20 msec		
Wave form		Sinusoidal		
Voltage distortion @ linear load		≤ 3%		
Voltage distortion @ distorting load (3)		≤ 6%		
Frequency (6)		50 ± 0.2Hz autosense		
Synchronisation range		46-54Hz		
Current crest factor		3 : 1		
Nominal power (3)	[VA]	1500	2000	
Nominal power	[W]	1050	1400	

OTHER VALUES

Current leakage to ground	[mA]	≤ 1.2		
AC/AC efficiency		88%		
Ambient temperature (7)	[°C]	0 – 40		
Humidity		< 90% non condensing		
Protections		Excessive battery discharge - overcurrent – short circuit – overvoltage - undervoltage - thermal		
Safety certifications		EN62040-1-1 and EEC 73 / 23, 93/68 specifications		
EMC compliance		EN 50091 - 2 cl. B and EEC 89/336, 92/31, 93/68 specifications		
Noise		< 45 dB(A) at 1 Mt.		
Dimensions H x W x D	[mm]	231 x 158x 500	340 x 192 x 460	
Weight	[Kg]	19	34	14

TECHNICAL SPECIFICATIONS

MODELS		**Dialog Plus 300**	**Dialog Plus 300 ER**

INPUT

Nominal voltage (±1.5%)	[Vac]	220 / 230 / 240	
Transfer Voltage Range			
-Low line transfer	[load %] [Vac]	Based on load percentage 100-80% =160 ± 5 80-70% = 140 ± 5 70-60%= 120 ± 5 60-0%= 110 ± 5	
-Low line comeback	[Vac]	170 ± 5	
-High line transfer	[Vac]	300 ± 5	
-High line comeback	[Vac]	285 ± 5	
Nominal frequency	[Hz]	50 / 60	
Nominal current	[A]	14.4	16
Power factor		≥ 0.97	
Input protection		16A thermal Breaker	

BYPASS

Accepted voltage range for switch over	[Vac]	180 - 264
Accepted frequency range for switch over		Selected frequency ±5 %
Time taken for switch over	[msec]	Typically: 2 - Maximum: 4

BATTERY

N° batteries / V / Ah		8 / 12 / 7.2	--
Recharge time	[h]	4 h to 80% of full charge	--

OUTPUT

Nominal voltage	[Vac]	220 / 230 / 240
Static variation (4)		1.5%
Dynamic variation (5)		≤ 5% in 20 ms
Wave form		Sinusoidal
Voltage distortion at linear load		≤ 3%
Voltage distortion at distorting load (3)		≤ 6%
Frequency (6)		50 ± 0.2Hz autosense
Synchronisation range		46-54Hz
Current crest factor		3 : 1
Nominal power (3)	[VA]	3000
Nominal power	[W]	2100

OTHER VALUES

Current leakage to ground	[mA]	≤ 1.2
AC/AC efficiency		88%
Ambient temperature (7)	[°C]	0 – 40
Humidity		< 90% non condensing
Protection		Excessive discharge of batteries – overcurrent – short circuit – overvoltage – undervoltage – thermal
Safety certifications		EN 62040-1-1 and EEC 73 / 23, 93/68 specifications
EMC compliance		EN 50091 - 2 cl. B and EEC 89/336, 92/31, 93/68 specifications
Hold-up time	[msec]	≥ 40
Noise		< 45 dB(A) at 1 Mt.
Dimensions H x W x D	[mm]	340 x 192 x 460
Weight	[Kg]	35 / 14

(1) at nominal load, minimum voltage of 164 Vac, battery charging

(2) at nominal load, nominal voltage of 230Vac, battery charging

(3) Second appendix M5 of the EN50091-1-1 specifications

(4) Mains/Battery at load: 0% -100%

(5) at Mains / battery / mains at resistive load: 0% / 100% / 0%

(6) If the mains frequency falls within ± 5% of the selected value, the UPS is synchronised with mains voltage. If the frequency is outside the accepted values or if the UPS is in battery mode, the selected frequency is adopted $\pm$0.1%.

(7) 20 - 25 °C to ensure a longer battery life.